What is claimed is:

1. An isolated SABP2 nucleic acid molecule comprising a sequence selected from the group consisting of:

a) SEQ ID NO: 1;

b) a sequence encoding a polypeptide of SEQ ID NO: 2;

c) a complement of SEQ ID NO: 1; and

d) a homolog of a sequence selected from the group consisting of a), b), and c).

2. The isolated nucleic acid molecule of claim 1, wherein said SABP2 nucleic acid molecule comprises SEQ ID NO: 1.

3. The isolated nucleic acid molecule of claim 1, wherein said SABP2 nucleic acid molecule comprises a sequence encoding SEQ ID NO: 2.

4. A cDNA produced by reverse transcription of an mRNA encoded by the nucleic acid molecule of claim 1.

5. An RNA molecule encoded by the SABP2 nucleic acid molecule of claim 1.

6. An expression vector comprising the nucleic acid molecule of claim 1.

7. An expression vector of claim 6 wherein said vector is selected from the group of vectors consisting of plasmid, cosmid, baculovirus, bacteria, yeast and viral vectors.

8. A host cell transformed with an expression vector of claim 6.

9. A host cell of claim 8, wherein said host cell is selected from the group consisting of tobacco, Arabidopsis, rice, maize, wheat, soybean, tomato, potato, barley, canola, bacteria, yeast, insect and mammalian cells.

10. An isolated SABP2 polypeptide encoded by the SABP2 nucleic acid molecule of claim 1.

11. The isolated SABP2 polypeptide of claim 10, which encodes an enzyme with a function selected from the group consisting of lyases, lipases, and esterases, wherein loss of function of the enzyme in a plant results in altered resistance of the plant to plant pathogens or other disease-causing agents.

12. An antibody immunologically specific for at least one epitope of an SABP2 polypeptide encoded by the SABP2 nucleic acid of claim 1.

13. A method for identifying agents which modulate the function of SABP2 or a SABP2 homolog in a host cell, comprising the steps of:

a) introducing an SABP2 or SABP2 homolog-encoding nucleic acid into said host cell;

b) treating said host cell with at least one agent suspected of modulating SABP2 or SABP2 homolog function; and

c) assaying SABP2 or SABP2 homolog function in the presence and absence of said agent in said host cell or extracts thereof.

14. The method of claim 13, wherein said agent has binding affinity for said SABP2 or SABP2 homolog.

15. The method of claim 13, wherein said agent modulates SABP2 or SABP2 homolog enzymatic activity.

16. The method of claim 13, wherein said agent modulates SABP2 or SABP2 homolog expression levels.

17. The method of claim 13, wherein said SABP2 or SABP2 homolog is isolated from said cell, and said assaying is performed *in vitro*.

18. The method of claim 13, wherein treatment of a plant with said agent produces increased resistance to plant pathogens or other disease causing agents in said plant.

19. A method as claimed in claim 13, wherein said agent is a salicylic acid analogue.

20. A method as claimed in claim 13, wherein said SABP2 or SABP2 homolog is affixed to a solid support.

21. A method as claimed in claim 13, wherein said SABP2 encoding nucleic acid molecule comprises SEQ ID NO: 1.

22. A method as claimed in claim 13, wherein said SABP2 homolog is encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NOS: 31-49.

23. The method as claimed in claim 13, wherein said

SABP2 homolog is encoded by SEQ ID NO:36.

24. A method to enhance resistance of a plant to plant pathogens or other disease causing agents comprising overexpressing an SABP2 nucleic acid molecule of claim 1 in a plant cell.

25. The method of claim 24, wherein said nucleic acid molecule comprises SEQ ID NO:1.

26. The method of claim 24, wherein said nucleic acid molecule comprises SEQ ID NO:36.

27. The method of claim 24, wherein resistance to plant pathogens or other disease causing agents is further enhanced by addition of an agent identified by the method of claim 13.

28. A transgenic plant comprising the nucleic acid molecule of claim 1.

29. The transgenic plant of claim 28, wherein said plant is fertile.

30. The transgenic plant of claim 28, wherein said plant has increased resistance to disease.

31. The transgenic plant of claim 28 wherein said nucleic acid molecule comprises SEQ ID NO: 1.

32. The transgenic plant of claim 28 wherein said nucleic acid molecule comprises a heterologous nucleic acid sequence of SEQ ID NO: 36.

33. A method to inhibit function of SABP2 or a SABP2 homolog in a plant, said method comprising the introduction of a mutated SABP2 or SABP2 homolog-encoding nucleic acid into said plant, said mutated SABP2 or SABP2 homolog-encoding nucleic acid encoding a non-functional SABP2 or SABP2 homolog protein.

34. The method of claim 33, wherein said mutated SABP2 or SABP2 homolog-encoding nucleic acid inhibits expression of SABP2.

35. The method of claim 33, wherein said mutated SABP2-encoding nucleic acid encodes an antisense molecule of SEQ ID NO: 1.

36. The method of claim 33, wherein said mutated SABP-2 encoding nucleic acid comprises an intron-containing double stranded RNA segment of SEQ ID NO: 1.

37. The method of claim 33, wherein said mutated SABP2 homolog-encoding nucleic acid encodes an antisense molecule of SEQ ID NO: 36.

38. The method of claim 33, wherein said mutated SABP2 homolog-encoding nucleic acid comprises an intron-containing double stranded RNA segment of SEQ ID NOS: 36.

39. A transgenic knock-out plant wherein expression of SABP2 or a SABP2 homolog has been significantly reduced relative to wild-type non-transgenic plants.

40. The plant of claim 39, which is fertile.

41. A method for screening functional homologs of

SABP2 to identify orthologs thereof, comprising:

a) providing a predetermined amount of SABP2 homolog;

b) determining level of binding affinity for salicylic acid in the presence and absence of analogs thereof;

c) determining level of esterase/lipase activity of said homolog;

d) determining level of esterase/lipase activity in the presence and absence of salicylic acid;

e) altering expression of said SABP2 homolog in a transgenic plant and determining whether such alteration modifies defense responses to pathogen infection; and

d) those homologs having SA binding affinity which is displaced by SA analogs, possessing esterase/lipase activity which is altered by salicylic acid and which, upon introduction into a host plant, modify defense responses to pathogen infection being identified as functional orthologs of SABP2.

42. The method of claim 41, wherein said SABP2 homologs are encoded by a nucleic acid selected from the group consisting of SEQ ID NOS: 31-49.

43. The method of claim 41, wherein said SABP2 homolog is SEQ ID NO: 36.